

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF GEORGIA
GAINESVILLE DIVISION

Santana Bryson and Joshua Bryson,	*	
as Administrators of the	*	
Estate of C.Z.B., and as surviving	*	
parents of C.Z.B., a deceased minor,	*	
	*	Civil Action File
Plaintiffs,	*	
	*	No. 2:22-cv-17-RWS
v.	*	
	*	
Rough Country, LLC	*	
	*	
Defendant.	*	

**PLAINTIFFS’ REPLY IN SUPPORT OF THEIR *DAUBERT* MOTION
TO EXCLUDE DEFENDANT’S UNREPRESENTATIVE CRASH TEST**

I. INTRODUCTION

RC bears the burden of proving that Exponent’s crash test is “substantial similarity” to the subject collision. *See Barnes v. Gen. Motors Corp.*, 547 F.2d 275, 277 (1977). But Exponent introduced so many confounding variables that the crash test is not “so nearly the same in substantial particulars as to afford a fair comparison in respect to the particular issue to which the test is directed.” *Burchfield v. CSX Transp., Inc.*, 636 F.3d 1330, 1336-37 (11th Cir. 2011). Because RC cannot meet its burden, the Exponent crash test must be excluded.

II. ARGUMENT

RC *admits* the purpose of the Exponent crash test was not to illustrate “general scientific principles,” but to re-create the conditions of the subject

collision.¹ Both Plaintiffs’ experts and Rough Country’s experts agree that Exponent’s crash test had to isolate the lift kit variable to produce scientifically valid results related to that variable.² Exponent failed to do that. Instead, Exponent significantly changed several variables in *addition* to the presence of a lift kit: the lateral offset, speeds, braking, structural characteristics, and cargo. By adding those variables, Exponent made it impossible to draw scientifically valid conclusions about the results.

A. Exponent’s crash test fails the “substantial similarity” test.

Admitting Exponent’s crash test would be a reversible error. When a Court admits a crash test with even *one* significant confounding variable affecting the validity of the results, it commits a reversible error. *See, e.g., Burchfield*, 636 F.3d at 1337 (reversing admission of a railroad handbrake test with the added variable of torque strength); *Gladhill v. Gen. Motors Corp.*, 743 F.2d 1049, 1051 (4th Cir. 1984) (reversing admission of a brake test performed on a straight road instead of a curved road). Exponent’s crash test did not only skew its results by introducing *one* new variable—it introduced at least *four* additional variables, each making it

¹ *See* Doc. 127, at 24 (“In this case, Rough Country is not presenting the Crash Test to demonstrate ‘general scientific principles[.]’”).

² Doc. 115-4, Grimes Dep., at 171:16-173:2-15. *See also* Doc. 115-5, Gwin Dep., at 9:23-13:13; Doc. 115-6, Buchner Rebuttal Report, at 3.

impossible to draw valid conclusions about the amount of intrusion its test purports to study.

1. Exponent’s crash test had significantly more lateral offset than the subject collision.

RC does not—and cannot—dispute that introducing five inches of additional offset can significantly bias a crash test’s results. Its own expert admits that.³ Instead, RC urges the Court to ignore the five inches of additional offset by claiming that fact is “disputed.”⁴ But this is not summary judgment and manufacturing a “dispute” with flimsy evidence does not satisfy RC’s burden. This Court sits as a fact finder when deciding preliminary evidentiary issues, and it can—and should—find RC’s evidence insufficient. *Burchfield*, 636 F.3d at 1338.

RC’s crash test could have used a device that would have allowed for a precise measurement of the amount of offset.⁵ Even though RC bears the burden of proving similarity, it chose not to use such a device to prove the amount of offset. In addition, it made no effort to measure offset when it reported its results.⁶ When Plaintiffs’ experts employed multiple independent means of measuring it, RC created new evidence with shoddy methodologies to manufacture a “dispute.”

³ See Doc. 115-4, Grimes Dep., at 184:18-185:1.

⁴ Plaintiffs also note that RC bears the burden of establishing the “substantial similarity” of Exponent’s crash test. Merely pointing to a flimsy “dispute” surrounding the lateral offset does not carry that burden.

⁵ See Doc. 115-9, Crosby Dep., at 71:11-21.

⁶ *Id.* at 48:7-17; Doc. 115-4, Grimes Dep., at 213:2-5.

Plaintiffs' experts used four different methodologies to confirm Exponent's crash test had five more inches of offset than the subject collision—an amount that everyone in this case agrees would affect the outcome of the test.

Mr. Buchner measured the distance between the “Ford” logo imprinted on the Ford Escape in both collisions.⁷ He performed that measurement using two methodologies: a direct photomodel comparison and photogrammetry from a 3D scan of the vehicles.⁸ By controlling for the camera angles, Mr. Buchner determined the crash test had 4.9 inches of additional offset than the subject collision.⁹

Mr. Buchner's measurements from the overhead crash test video also confirm his offset conclusions. RC's sole attempt to dismiss Mr. Buchner's overhead offset measurements fails—it merely cites several experts' testimony that overhead photographs may be affected by “parallax.”¹⁰ But RC ignores the fact that Mr. Buchner's measurements *accounted for* the parallax effect.¹¹ Adjusting for parallax, Mr. Buchner's overhead measurements confirmed that Exponent's

⁷ See Doc. 115-6, Buchner Rebuttal Report; Doc. 115-10 Buchner Crash Test Offset PowerPoint.

⁸ *Id.* at 5-8.

⁹ *Id.*

¹⁰ See Doc. 127, Def's Br., at 12-13.

¹¹ See Doc. 115-6, Buchner Rebuttal Report, at 8 (“Because of the perspective of the camera, there was a range for the offset between the vehicles in this analysis, which resulted in a difference of 4.1 inches to 6.1 inches of difference laterally.”); see also Ex. 1, Buchner Rebuttal Dep., at 209:9-23.

crash test added between 4.1 and 6.1 inches more offset than the subject collision.¹² Because he accounted for the only thing RC could think of to critique his methodology, Mr. Buchner's overhead offset measurements are effectively un rebutted.

Mr. Roche used another independent methodology to confirm Exponent's incorrect offset. By comparing the damage to the Escape's right liftgate pillar in the subject crash and the crash test, Mr. Roche determined Exponent's crash test introduced *at least* four inches of additional offset.¹³ That methodology and opinion went *entirely un rebutted* by RC's experts.¹⁴ RC's half-hearted characterization of Mr. Roche's methodology as "subjective" is nothing more than a lawyer disputing the sworn testimony of an engineer with decades of experience working for automakers. Mr. Roche relied on precise scan data to measure the minimum distance between the structures exhibiting direct contact in the subject crash and indirect contact in the crash test.¹⁵

RC's sole source of a "dispute" with Plaintiffs' experts comes from deeply unscientific "eyeball tests." Mr. Crosby's *belief* that he got the offset right does

¹² *Id.* at 8-9.

¹³ *See* Doc. 115-12, Roche Rebuttal Report, at 5-6; 9.

¹⁴ Mr. Grimes' belated sur-rebuttal report ignored this opinion altogether.

¹⁵ *See* Doc. 127-2, Roche Dep., at 31:20-32:20.

not create a legitimate dispute—he admits he “hasn’t measured it exactly.”¹⁶

When asked what methodology he would use if he wanted to “drill down to specifics,” *Mr. Crosby described Mr. Buchner’s analysis*, which showed Exponent’s crash test added five inches of additional offset.¹⁷

Mr. Grimes’ belated offset “measurement” fares no better.¹⁸ Mr. Grimes’ sole “measurement” of the crash test offset was a less sophisticated version of what Mr. Buchner did. With no apparent justification, he superimposed “Ford” logos over inconsistent areas of the subject Escape and crash test Escape and measured the logos he placed.¹⁹ Critically, Mr. Grimes’s measurement of the scuff marks on the crash test Escape *missed* the damage mark he purports to measure:



¹⁶ Doc. 127-1, Crosby Dep., at 48:13-17 (verb tense changed); *see also id.* at 72:4-10 (Crosby only performed a “visual inspection post test” to determine the offset).

¹⁷ *Id.* at 49:10-21.

¹⁸ Because RC did not disclose Mr. Grimes’ sur-rebuttal report until six months past the Court’s deadline, Plaintiffs have moved to strike it. *See* Doc. 116.

¹⁹ Mr. Grimes superimposed his “Ford” logo over the farthest left portion of the subject vehicle’s scuff marks but moved his “Ford” logo drastically to the right when measuring the crash test Escape’s scuff marks. *See* Doc. 115-18, Grimes Sur-Rebuttal Report, at 17-18. That skewed his comparison of the scuff marks into a false conclusion that the crash test only introduced one additional inch of offset.

Although Plaintiffs’ initial brief specifically highlighted this fatal flaw, RC’s brief does not even *attempt* to justify it.²⁰ Mr. Grimes’ measurement of an arbitrarily placed “Ford” logo comes nowhere near carrying RC’s “substantial similarity” burden.

Exponent’s crash test increased the lateral offset by 45 percent—an amount RC’s *own expert* agrees is significant enough to skew the results.²¹ Based on that fact alone, Exponent’s crash test fails the “substantial similarity” test and must be excluded.

2. Exponent’s crash test used a Ford Escape with significantly different structural features.

Exponent *chose* to perform its crash test on a vehicle with a different structure than the Bryson family’s, even though it purchased and had in storage a vehicle with a sunroof. RC concedes Mr. Roche’s un rebutted testimony that the crash test vehicle had a *weaker* structure, making it *more* susceptible to intrusion in a crash.²² By performing the crash test on a vehicle with a weaker structure, Exponent changed another variable that biases the results in RC’s favor.

Mr. Grimes’ *belief* that the lack of a sunroof did not change the results does not carry RC’s “substantial similarity” burden. Mr. Grimes did nothing to

²⁰ See Doc. 115, Pls’ Br., at 23-24.

²¹ See Doc. 115-4, Grimes Dep., at 184:18-185:1.

²² Doc. 115-2, Roche Rebuttal Report, at 8-9.

determine how much Exponent’s decision to use a weaker crash test vehicle skewed the results.²³ In fact, physical evidence shows that the weaker roof structures in the crash test Escape behaved differently than the subject collision.²⁴ The weaker roof deformed differently throughout the vehicle—including above the occupant space that the crash test purports to study.²⁵

RC is correct that Plaintiffs’ experts cannot measure how much Exponent’s use of a weaker vehicle skewed the test results. No one can. By introducing several new variables at once, Exponent made it impossible for *anyone* to determine precisely how much using an Escape with different roof structures affected the test results. That’s exactly the point—the lack of “substantial similarity” between the crash test and subject collision removed any possibility of reaching scientifically valid conclusions based on a “fair comparison” of the circumstances. *See Burchfield*, 636 F.3d at 1337; *United States v. Gaskell*, 985 F.2d 1056, 1060 (11th Cir. 1993).

3. Exponent did not place cargo in the trunk of the Ford Escape, then attributed the test results to that change without any data or evidence to support its claim.

RC cannot claim its decision to run the crash test without any rear cargo was “immaterial” while its own experts attribute their core conclusions about the crash

²³ Doc. 115-4, Grimes Dep., at 231:23-232:21.

²⁴ Doc. 115-2, Roche Rebuttal Report, at 8-9.

²⁵ *Id.*

test to the absence of cargo.²⁶ It's hard to imagine a more confusing position to require a jury to puzzle out. RC says **without citation** that “the Crash Test affirmatively showed that the rear seat would still have been displaced forward enough to kill C.Z.B., even without the cargo.”²⁷ But there is no admissible evidence of that.²⁸ In fact, the post-crash pictures of the test seat look nearly pristine.²⁹ RC's experts speculate that the second-row seat *would have* deformed like the seat in the subject collision *if* Exponent had included the cargo in the trunk.³⁰ That speculative claim relies on a variable Exponent intentionally changed to “close the gap” on a crash test result RC doesn't like.

RC knew the contents of the Bryson family's trunk.³¹ Not knowing the precise *location* of the cargo within the trunk does not justify running the crash test without any cargo in the trunk *at all*. That is an assumption Exponent *knew* was

²⁶ See, e.g., Doc. 115-4, Grimes Dep., at 197:25-201:3; Doc. 115-3, Grimes Report, at 33.

²⁷ Doc. 127 at 19.

²⁸ RC's biomechanic, Dr. Lisa Gwin, testified that C.Z.B. “likely” would have died in the Exponent crash without the cargo, which she determined simply by looking at the videos of the test. But crash tests determine likelihood of injury by using measurements—either through injury values on instrumented dummies or physically measuring survival space. Dr. Gwin did no measurements to determine likelihood of survival—she just watched the crash test videos. She testified that there is no test procedure that she knows of that would validate this “method” of eyeballing it. See Ex. 2, Gwin Dep., at 20:25-22:5.

²⁹ Doc. 115 at 15.

³⁰ See *supra* n. 26.

³¹ See Doc. 115-15, Pls' Resps. to Def's Second Interrogs.; see also Ex. 3, Grimes Dep., at 201:18-202:4.

incorrect—Mr. Grimes admitted the lack of cargo in the crash test was inconsistent with the subject collision.³²

To be clear—RC’s experts are incorrect that the cargo affected the amount of intrusion into C.Z.B.’s seat.³³ Mr. Grimes did not base that conclusion on any testing, literature, calculations, or measurements.³⁴ He performed no analysis *at all* to reach that conclusion. It is based on nothing more than his own speculation and say-so. *See United States v. Frazier*, 387 F.3d 1244, 1261 (11th Cir. 2004) (speculative opinions based on an expert’s ipse dixit must be excluded).

Nonetheless, the lack of cargo demonstrates why RC’s test is junk science: RC changed the variable that *RC claims* would have affected the very thing it purported to test, i.e., the amount of crash intrusion into the second row. *See Barnes*, 547 F.2d at 277; *see also Gladhill*, 743 F.2d at 1052 (excluding a crash test with changed conditions which were “dissimilar in [] fundamental and important respects”).

4. Exponent’s crash test did not account for Mr. Elliott’s pre-impact braking.

Black box data from the subject F-250 shows Mr. Elliott applied the brakes in the last .5 seconds before impact.³⁵ As Mr. Grimes testified, “We don’t know

³² Doc. 115-4, Grimes Dep., at 193:17-194:10.

³³ *See* Doc. 119-6, Buchner Dep., at 91:17-23.

³⁴ Doc. 115-4, Grimes Dep., at 197:25-201:3.

³⁵ *See* Ex. 3, Grimes Dep., at 147:19-148:2.

two things [about Mr. Elliott’s braking]. We don’t know when and we don’t know how much.”³⁶ Mr. Grimes calculated that the F-250’s braking slowed it down *between* zero and 7.7 miles per hour.³⁷ Despite the wide range of possible travel speeds, Exponent chose the highest speed possible and ran the crash test without any braking *at all*.

RC’s sole justification is its claim that, because Mr. Grimes does not know the exact amount of braking, applying any amount of braking to the crash test would have been speculative.³⁸ But Exponent’s decision to apply *no braking at all* is not just speculative—it is an assumption RC *knows* is incorrect based on black box data.

RC’s attempt to use Mr. Buchner’s speed calculation to support its braking discrepancy equally fails. Unlike RC, Mr. Buchner’s speed calculation assumed Mr. Elliott did not apply the brakes to create a conservative, “worst case scenario” estimate of the *highest possible* collision speed.³⁹ That estimate allowed him to determine the *highest possible* amount of crush—reducing the F-250’s speed to account for braking would have only improved Mr. Buchner’s results.⁴⁰ RC cannot use Mr. Buchner’s conservative estimate *in RC’s favor* to justify skewing

³⁶ *Id.*

³⁷ See Doc. 115-16, Grimes CDR Analysis Chart, at 4; *id.* at 149:15-22.

³⁸ See Doc. 127, Def’s Br., at 21.

³⁹ See Doc. 119-6, Buchner Rebuttal Dep., at 102:16-103:10; 163:7-165:2.

⁴⁰ *Id.*

the results of its crash test *in its own favor*. And Mr. Buchner's willingness to provide a range of speeds does not change the fact that RC's own expert admits he did not account for braking, even though breaking was present in the subject crash.

B. Mr. Buchner's HVE Simulation does not have the same defects as Exponent's crash test.

RC cannot satisfy its burden to establish substantial similarity by comparing its test to Mr. Buchner's HVE simulation. However, RC spends several pages justifying the flaws in the crash test by comparing them to Mr. Buchner's HVE simulation. Those comparisons are false. Most importantly, With regard to the other variables, Mr. Buchner applied conservative assumptions in RC's favor. But Exponent's crash test significantly changed several variables *in RC's own favor*, destroying any ability to reach scientifically valid conclusions about the crash test's results.

First, Exponent's crash test has an amount of offset that all parties agree **would** materially change the outcome of the test. Mr. Buchner's HVE simulation used an amount of offset that everyone agrees **would not** materially affect the outcome. Exponent's crash test had 5 inches \pm 1 inch of *additional* offset from the subject collision.⁴¹ RC's *own expert* confirmed Mr. Buchner's offset estimate would not adversely affect the results of the analysis, but a 5-inch offset

⁴¹ If the overshoot favored anyone, it would be RC. Doc. 119-6, Buchner Rebuttal Dep., at 268:9-19.

discrepancy (the exact discrepancy in Exponent’s crash test) would.⁴² The offset difference alone **requires** excluding the Exponent crash test, because it materially affects the outcome of the test, and it affects in a way that favors RC.

Second, RC cannot justify the crash test’s speed and lack of sunroof by pointing to Mr. Buchner’s HVE analysis. Unlike Exponent, whenever Mr. Buchner encountered a limitation in available information, he applied the *most conservative* assumption to preserve the validity of his results. Given the range of possible impact speeds caused by Mr. Elliott’s braking, Mr. Buchner calculated the highest speed to create a “worst case scenario” for his simulation.⁴³ Similarly, the fact that the HVE software does not include a sunroof option would only serve to benefit RC by increasing intrusion.⁴⁴ RC cannot justify using those same assumptions—each assumption tends to *increase* intrusion, making it conservative for Mr. Buchner’s purposes, but not for Exponent’s purposes.

The difference between Mr. Buchner’s conservative approach and Exponent’s self-serving approach goes to the core of the “substantial similarity” requirement. Mr. Buchner used his crush calculations and HVE simulation to conclude that an unlifted F-250 would have intruded at least two fewer feet into the

⁴² Doc. 115-4, Grimes Dep., at 185:2-187:2.

⁴³ See Doc. 119-6, Buchner Rebuttal Dep., at 102:16-103:10; 163:7-165:2.

⁴⁴ Doc. 115-2, Roche Report, at 10; see also Doc. 127-2, Roche Rebuttal Dep., at 64:11-19.

subject Escape.⁴⁵ By filling in all gaps with the most conservative inputs *in RC's favor*, he could comfortably reach that conclusion—changing any of Mr. Buchner's variables would have only *decreased* the stock F-250's intrusion into the Escape and made his results more favorable to Plaintiff.⁴⁶ Exponent's crash test did the opposite. It significantly changed the lateral offset, speeds, braking, cargo, and structural characteristics in *RC's favor*, making it impossible to draw any scientifically valid conclusions about the validity of its results. Where Mr. Buchner could make “a fair comparison in respect to the particular issue” he studied, RC could not. *Burchfield*, 636 F.3d at 1337-37.

C. The Court should exclude Exponent's dissimilar crash test under Rule 403.

RC has demonstrated it intends to cause the jury to “attach exaggerated significance to the test” and ignore its dissimilarities to the subject collision. *See Barnes*, 547 F.2d at 277. Regardless of the numerous confounding variables invalidating the test, RC believes the jury “would plainly see” C.Z.B. would not have survived because “the destructive impact of the F-250 on the Escape is obvious.”⁴⁷ Even RC's expert biomechanic bases her core survivability opinion on her subjective belief that the crash test appeared “violent.”⁴⁸

⁴⁵ *See* Doc. 119-1, Buchner Initial Report, at 11.

⁴⁶ *See* Doc. 119-6, Buchner Rebuttal Dep., at 102:16-103:10; 163:7-165:2.

⁴⁷ *See* Doc. 127, Def's Br., at 1; 5.

⁴⁸ *See* Ex. 2, Gwin Dep., at 19:7-14.

RC aims to use the *appearance* of the crash test to cause the jury to reach false conclusions about the collision despite the test’s flawed offset, speeds, braking, sunroof, and cargo. That introduces the precise danger of “misleading the jury” that warrants exclusion under Rule 403. *See* Fed. R. Civ. P. 403; *see also id.* at 278 (holding the admission of a roll-stop test was reversible error because “the drama of the test, demonstrating nothing probative, was calculated to cause the jury to accept the plaintiff’s theory”); *Burchfield*, 636 F.3d at 1338 (admission of a test video dissimilar to subject incident was reversible error because it prejudiced the jury “on the pivotal issue in the case”).

III. CONCLUSION

For the reasons above, Plaintiffs ask the Court to exclude Exponent’s crash test in its entirety and prevent RC’s experts from testifying about it or using it to support their opinions.

Respectfully submitted on February 25, 2025.

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CERTIFICATE OF COMPLIANCE

Pursuant to Local Rules 5.1(B) and 7.1(D), I hereby certify that the foregoing filing complies with the applicable font and size requirements and is formatted in 14-point Times New Roman font.

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing *PLAINTIFFS' REPLY IN SUPPORT OF THEIR DAUBERT MOTION TO EXCLUDE DEFENDANT'S UNREPRESENTATIVE CRASH TEST* was electronically filed with the Clerk of Court via CM/ECF, which will automatically serve the following attorneys of record:

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This 25th day of February, 2025.

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